

**REMARKS**

The Examiner's Action mailed on March 15, 2007, has been received and its contents carefully considered.

In this Amendment, Applicants have amended claims 1, 13, 14, 22 and 25, and cancelled claims 2 and 23 without prejudice. Claims 1, 18, 22 and 26 are the independent claims, and claims 1, 3-22 and 24-28 remain pending in the application. For at least the following reasons, it is submitted that this application is in condition for allowance.

Applicant wishes to thank the Examiner for allowing claims 18-21 and 26-28, and for indicating that claims 13 and 14 would be allowable if rewritten in independent form, although objected to for dependence from rejected claim 1. As the amended claim 1 is believed to be allowable, it is respectfully requested that this objection be withdrawn.

Claims 1-3, 5-12, 15-17 and 22-25 were rejected under 35 U.S.C. § 103(a), as being obvious over *Lee* (US 2004/0170149 A1) in view of *Nakabayashi* (US 2004/0038685 A1). This rejection is respectfully traversed.

Before discussing the prior art relied upon in the Office Action, it is believed beneficial to first briefly review the method and structure of the invention of the subject Patent Application, as now claimed. The invention of the subject Patent Application is directed to an apparatus for controlling

multi-radio access that includes a physical layer, a radio system layer connecting with the physical layer for performing medium access control, and a radio adaptation layer connecting with the radio system layer.

Further, the radio adaptation layer includes a configuration controller used to establish or control a radio link according to a signal packet so as to perform seamless handoff within different wireless communication systems and set corresponding traffic control parameters.

Further, the radio adaptation layer includes a traffic controller used to transmit a data packet according to the traffic control parameters and requirements of quality of service (QoS) of the data packet. The invention of the subject Patent Application is also directed to a packet-transmitting method for controlling multi-radio access. The packet-transmitting method includes a step of recognizing a format of a received packet. The method includes a step of determining if the received packet is a signaling packet.

Still further, the method includes a step of passing the received packet to a configuration controller if the received packet is the signaling packet. Still further, the method includes a step of establishing a corresponding radio link according to parameters of the signaling packet and present network resources, and setting corresponding parameters of a traffic controller to fit predetermined requirements of QoS. Further, the method has a step of

passing the received packet to the traffic controller if the received packet isn't the signaling packet but a data packet, and controlling a quality of a connection according to predetermined parameters of traffic control and then sending out the data packet orderly.

In contradistinction, the *Lee* reference is directed to a system and a method of simulating mobile communication by means of local area network. An object of the reference is to provide a *simulated mobile station*. The method of the reference has a step of initializing the simulated mobile station, in which the simulated mobile station requests a simulated base station controller to obtain the dynamic IP address and establish a channel. Next, the simulated mobile station performs a certification procedure on the simulated base station and enters into a link state if the certification procedure is successful. In particular, the reference system is a *simulated mobile communication system*, which includes a *first machine* for simulating a base station controller, a *second machine* for simulating a base station, and *multiple third machines* for simulating the mobile stations associated with the corresponding base station. Where, each of the third machines has an *upper adaptation layer*, a *control entity*, a *service entity*, an *event generator*, a *pseudo driver*, a *network translation program*, and a *database*.

The *Nakabayashi* reference is directed to a QoS control method for transmission data for radio transmitters and radio receivers. Generally, the QoS control method is to take the quality of service into consideration when the radio transmitter or receiver performs the data transmission.

The Applicant respectfully submits that the rejection made in the Office Action, which merely combines the mobile communication system of *Lee* and the QoS technology of *Nakabayashi*, does not teach all elements of the invention as presently claimed in claims 1 and 22.

The Applicant further respectfully submits that even though the mobile communication system of *Lee* may disclose some basic elements of the present invention, such as the physical layer, the radio system layer, the radio adaptation layer and others, *Lee* has a different purpose and fails to teach or give any suggestion of “*physical*” *apparatus for controlling multi-radio access* as *Lee* is directed to simulating a “virtual” mobile station to develop a “WCDMA” chip. Moreover, the above-mentioned *simulated mobile communication system* having the *simulated base station controller*, the *simulated base station*, and the *simulated mobile stations* need not take any consideration of the physical layer, so that the elements such as the upper adaptation layer **101** and the control entity **102** have completely different operations. Further, the subject matter of the claimed invention is

applied to a *multi-mode system* having *multi-radio* access, which is not a “single” communication system having RRC and MAC layers.

Moreover, the claimed invention provides data transmission in a *physical multi-mode mobile device*, but *Lee* is directed to simulating a peer-to-peer transmission in a single system. Nowhere does *Lee* disclose or suggest the requirements of quality of service (QoS) of the data packet applied to the traffic controller.

Claim 1 has been amended to involved the features described in claim 2, where a network layer is involved and used to pass the data packet and signal packet to the radio adaptation layer, the network layer using an Internet protocol (IP) so as to make the apparatus able to roam within the different wireless communication systems and *support QoS mechanisms*.

Further, claim 22 has been amended to have all the steps described in claim 23, which recites the further steps in the step of determining if handoff is necessary according to a status of a present radio link.

Nowhere does *Lee* disclose or suggest the *seamless handoff* applied to the different *wireless communication systems*. Still further, nowhere does *Lee* disclose or suggest the step for determining if it is necessary to perform the *seamless handoff*, comprising the further steps as now claimed in claim 22. In particular *Lee* does not in fact teach the step of “modifying a setting of

a radio module to improve the quality of the present radio link *if the handoff isn't necessary*" (*emphasis added*) as alleged in the Office Action. Instead, Lee teaches that if the RSSI is greater than a specific value in step **S405** (i.e. if the handoff isn't necessary), then "Further, packet receiving and sending are performed for simulating mobile communication. The process then loops back to step **S405**", as per ¶[0025]:

*In step S405, the simulation mobile station enters into a link state for simulating mobile communication. The event generator 103 generates a received signal strength indicator (RSSI) based on a random procedure. The RSSI is in turn sent to the upper layer mobile communication protocol 120 by the pseudo driver 105. Furthermore, the upper layer mobile communication protocol 120 determines whether RSSI is larger than a predetermined value. If yes, the process goes to step S406. Otherwise, the process jumps to step S407. In step S406, a handoff is not required. Further, packet receiving and sending are performed for simulating mobile communication. The process then loops back to step S405.*

*(emphasis and further emphasis added)*

That is, in Lee, if "a handoff is not required" then "Further, packet receiving and sending are performed for simulating mobile communication. The process then loops back to step **S405**", and there is no step of "modifying a setting of a radio module to improve the quality of the present radio link *if the handoff isn't necessary*" as recited in claim 22, and neither does Nakabayashi teach or suggest such a step.

Further, nowhere does Lee disclose or suggest the step of "translating QoS attributes for mapping parameters", as presently recited in claim 22, and

the Office action does not allege that this step is taught or suggested by *Nakabayashi*, alleging instead that such a step is taught by *Lee*, but nowhere in the sections of *Lee* relied upon, nor anywhere else in *Lee*, is there any discussion of QoS.

Further, although also alleged in the Office Action, nowhere does *Lee* disclose or suggest the step of “setting parameters of a traffic controller to fit the new radio link”, as also presently recited in claim 22.

The Office Action admits that *Lee* is *silent* on a traffic controller used to transmit the data packet according to the traffic control parameters and *requirements of quality of service (QoS)*. The Applicant respectfully submits that the claimed invention as recited in claim 1 is non-obvious for at least the reason that neither *Lee* nor *Nakabayashi*, whether taken separately or in combination provide any teaching or suggestion of “a traffic controller used to transmit a data packet according to the *traffic control parameters and requirements of quality of service (QoS) of the data packet*” (*emphasis added*).

In the invention of the subject Patent Application, the apparatus and method for controlling multi-radio access are provided. The invention supports *multi-mode reconfigurable media control*, QoS and *seamless handoff in different wireless communication systems*, those features are not

obvious in light of *Lee* and *Nakabayashi*, whether taken separately or in combination.

More particularly, the Office action fails to show that Le and N, whether taken separately or in combination, fail to teach or suggest at least “a traffic controller used to transmit a data packet according to the *traffic control parameters and requirements of quality of service (QoS) of the data packet*” as recited in claim 1 or “modifying a setting of a radio module to improve the quality of the present radio link *if the handoff isn't necessary*” or “translating QoS attributes for mapping parameters” or “setting parameters of a traffic controller to fit the new radio link” as recited in claim 22, which therefore patentably define over the art of record and are allowable, together with all claims that depend therefrom.

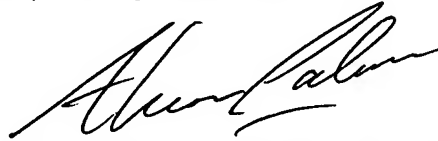
It is submitted that this application is in condition for allowance. Such action and the passing of this case to issue are requested.



Should the Examiner feel that a conference would help to expedite the prosecution of this application, the Examiner is hereby invited to contact the undersigned counsel to arrange for such an interview.

Should any fee be required, however, the Commissioner is hereby authorized to charge the fee to our Deposit Account No. 18-0002, and advise us accordingly.

Respectfully submitted,



June 29, 2007  
Date

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